What is claimed is:

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1. A method for storing data by a computer dividing redundant data into a plurality of volumes, distributing and storing the volumes in a plurality of scattered storage units through a network, comprising:

computing an evaluation value indicating desirability of each of the scattered storage units to be used based on a bandwidth, a communications cost, and a physical distance between a node to which a write request is issued and a storage unit; and

selecting a plurality of storage units as an optimum storage set from among the scattered storage units based on the evaluation value.

- The method according to claim 1, wherein
 in computing the evaluation value, a hop count
 from a node to which the write request is issued to
 each storage unit is further used.
 - 3. The method according to claim 1, further comprising
- 25 providing the storage unit as a virtual

storage unit for a user of the system.

4. The method according to claim 1, further comprising:

when the data is read from the storage set, reading from each storage unit volumes not containing a redundant portion among the plurality of volumes written to the storage set; and

reconstituting the data using the read volumes.

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5. The method according to claim 3, further comprising:

when the data is read, computing a use priority indicating high response based on the bandwidth and the cost for each storage unit; and

determining which volumes among the plurality of volumes are to be read from each storage unit as volumes not containing a redundant portion based on the use priority.

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6. The method according to claim 1, further comprising

storing a replica of a first volume in the plurality of volumes in a storage unit not selected as the storage set.

7. The method according to claim 6, further comprising

when a replica of the first volume is generated, based on the evaluation valueselecting a method from between two generating method based on the evaluation value, that is, replicating the first volume from a storage unit storing the first volume, and regenerating the first volume using redundancy from volumes other than the first volume in the plurality of volumes.

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- 8. The method according to claim 6, further comprising
- selecting a storage unit storing a replica of the volume from among the storage units not selected as the storage set based on the evaluation value.
 - 20 9. The method according to claim 6, further comprising

writing a volume in a multicast system to a plurality of storage units storing the same volume.

25 10. The method according to claim 6, wherein

when a replica of the first volume is written to a storage unit, a writing process is performed in plural operations.

5 11. The method according to claim 1, further comprising

when a fault occurs in the first storage unit in the storage set, limiting a write to other storage units in the storage set.

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12. The method according to claim 1, further comprising

when a fault occurs in a third storage unit in the storage set, selecting based on the evaluation value a fourth storage unit other than a storage unit selected as the storage set instead of the third storage unit.

13. The method according to claim 1, further comprising:

after selecting the storage set, reselecting a storage set in each node at a predetermined timing; and

when there is a volume not used by any node as

25 a result of reselection, deleting the volume from a

storage unit.

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- 14. The method according to claim 13, wherein the predetermined timing refers to a predetermined period after previous selection or a timing of changing a state of a volume.
- 15. The method according to claim 1, further comprising:
- after reading the data, temporarily storing the data for a predetermined period in an arbitrary storage unit; and

when data is read within the predetermined period, reading temporarily stored data from the storage unit.

16. A method according to claim 1, further comprising:

temporarily storing data specified in a write request within a predetermined period in a temporary storage area;

retrieving data from the temporary storage area after the predetermined period;

dividing the data into a plurality of volumes;

writing the plurality of volumes in the storage set.

17. The method according to claim 15, further comprising

when a reading or writing process is performed on data including the temporarily stored data, reading or writing only a portion of data not containing the temporarily stored data.

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18. The method according to claim 1, further comprising

when the plurality of volumes are written to the storage set, prohibiting a writing process on the storage set until a write is completed for a node to which the write request is issued.

- 19. The method according to claim 18, further comprising
- determining a storage unit as a representative storage unit from among a plurality of storage units storing the same volumes, wherein:

in prohibiting a writing process in the plurality of storage units,

25 prohibiting a writing process to the

representative storage unit is performed by a node to which the write request is issued; and

prohibiting a writing process to a storage unit other than the representative storage unit is performed by the representative storage unit.

20. The method according to claim 19, wherein the representative storage unit is a storage unit for storing a volume as original data.

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21. A computer-readable storage medium storing a program used to direct a computer to control processes of dividing redundant data into a processes of dividing redundant data into a plurality of volumes in a system comprising storage units scattered through a network, and distributing and storing volumes in a plurality of storage units, and storing volumes units of storage units, and storing volumes

desirability of each of the scattered storage units to be used based on a bandwidth, a communications

cost, and a physical distance between a node to which a write request is issued and a storage unit;

and
selecting a plurality of storage units as an
optimum storage set from among the scattered

storage units based on the evaluation value.

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22. A control device which controls dividing redundant data into a plurality of volumes in a system having scattered storage units through a network, and distributing and storing volumes in a plurality of storage units, comprising:

route management means for computing an evaluation value indicating desirability of each of the scattered storage units to be used based on a bandwidth, a communications cost, and a physical distance between a node to which a write request is issued and a storage unit; and

storage set management means for selecting a plurality of storage units as an optimum storage set from among the scattered storage units based on the evaluation value.

23. A control device which controls dividing redundant data into a plurality of volumes in a system having scattered storage units through a network, and distributing and storing volumes in a plurality of storage units, comprising:

a route management unit computing an evaluation value indicating desirability of each of

the scattered storage units to be used based on a bandwidth, a communications cost, and a physical distance between a node to which a write request is issued and a storage unit; and

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a storage set management unit selecting a plurality of storage units as an optimum storage set from among the scattered storage units based on the evaluation value.